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Institute for Energy Research (IEF)

Options for Land-Use projects under GIS

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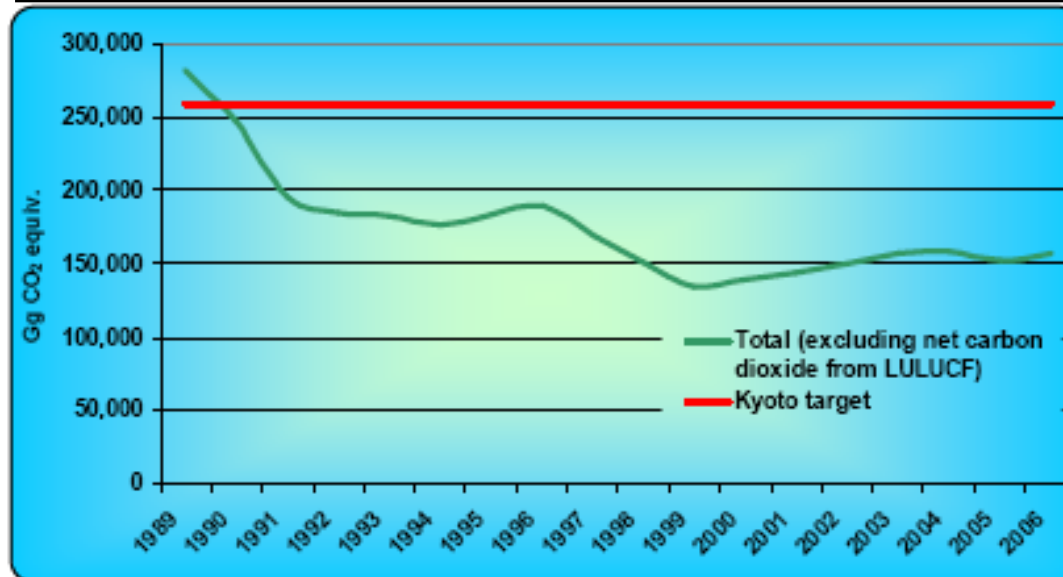
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1. What are Green Investment Schemes (GIS)?
2. GIS as financial resource
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1. What are Green Investment Schemes (GIS)? (I)

- Surplus emission rights in Central and Eastern European countries = Kyoto Units (AAU) that can be sold into the International Emissions Trading System (IET)

Graph: Romania's Kyoto target and actual emissions



Total GHG emissions vs Kyoto Target in Romania (Romania's GHG Inventory 1989-2006, submission to UNFCCC, Ministry of Environment and Sustainable Development 2008)

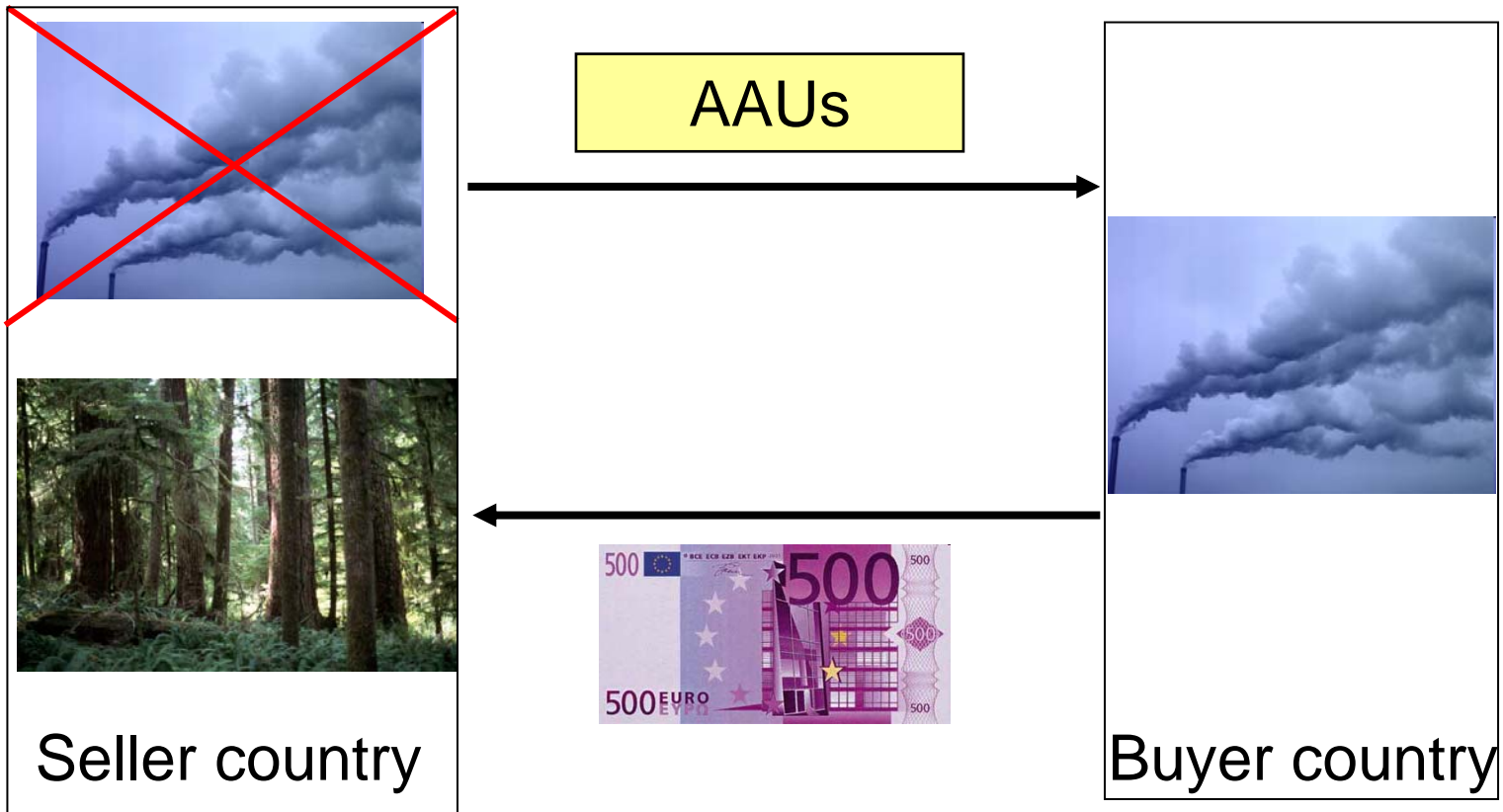
1. What are Green Investment Schemes (GIS)? (II)

- Specific case of Emissions Trading:
 - AAU surplus results from economic down-turn
 - Buyer countries require proceeds to be invested in **Green Investment Schemes (GIS)**
- GIS:
 - Projects with socio-economic & ecologic co-benefits, or
 - Compensation for economic down-turn

GIS – a Gift to Society: Climate Change related projects with socio-economic and ecological co-benefits

1. What are Green Investment Schemes (GIS)? (III)

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2. GIS as financial resource

- GIS may generate several billion € on national level depending on the country's surplus
- Romania: 30 million tons potentially available for sale annually between 2008 and 2012
→ € 1.2 to 1.8 billion (€ 8/12 /ton) over the period
- Market for GIS uncertain: Russia alone could meet worldwide AAU demand

3. GIS vs JI

- No LULUCF projects implemented under JI so far
- Possible advantages of GIS:
 - No international binding LULUCF procedures
 - No delay in the rate of return
 - No need for 1:1 equivalence (€/ton C). Cost efficiency not first priority
 - No need for credit generation

4. Project examples Romania

- A) Afforestation of deforested private lands
- B) Planting of fast growing crops



4. Afforestation of private lands – Situation

- Forests cut after restitution (post 1990) due to different reasons:
 - Lack of knowledge on forest management/ weak state institutions
 - Fear of a come-back of communism
 - Thefts
- CO₂ emissions continue in current years
- Land owners lack resources to afforest

4. Afforestation of private lands – Potential

- Romania: approx. 10,000 ha available
- Cost: € ~3000/ha or 30 million € total
- Potential removal of 9 to CO_2 /ha/yr (180 to in 20 years, mitigation cost € 16.6 /ton CO_2)



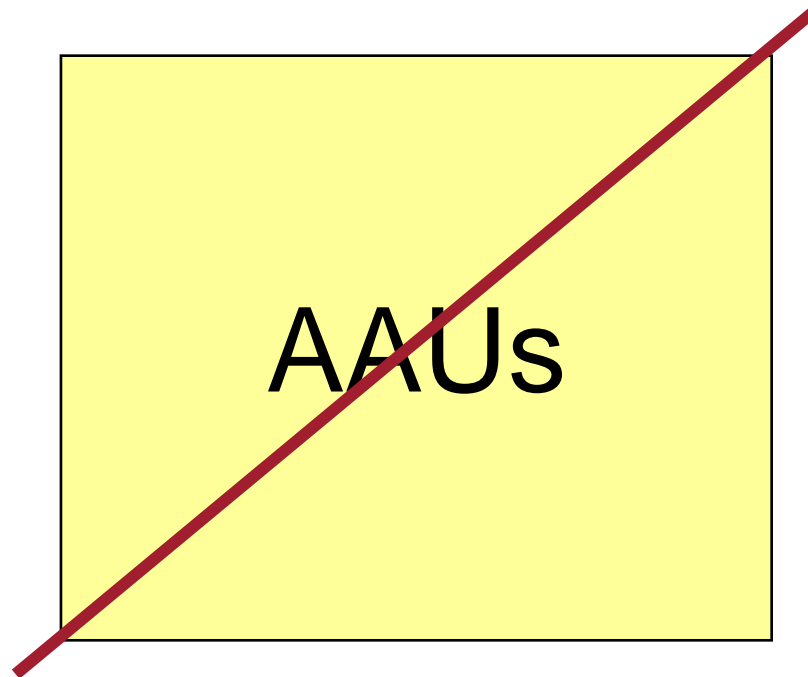
4. Afforestation of private lands – Co-benefits

- Ecological improvement
 - Improve hydrologic cycle
 - Biodiversity
 - Reduce soil erosion

- Diversification/ increase of land owners income potential

4. Additional advantage of GIS

- Afforestation on lands deforested since 1990 can not generate Kyoto credits



4. Fast growing crops: Purpose

- Supply national paper industry to prevent it's decline and the need of paper imports
- Reduce pressure on natural remnants of riverine forests
- Supply (additional) biomass-based energy production/heating (further mitigation potential)



4. Fast growing crops: Project potential (I)

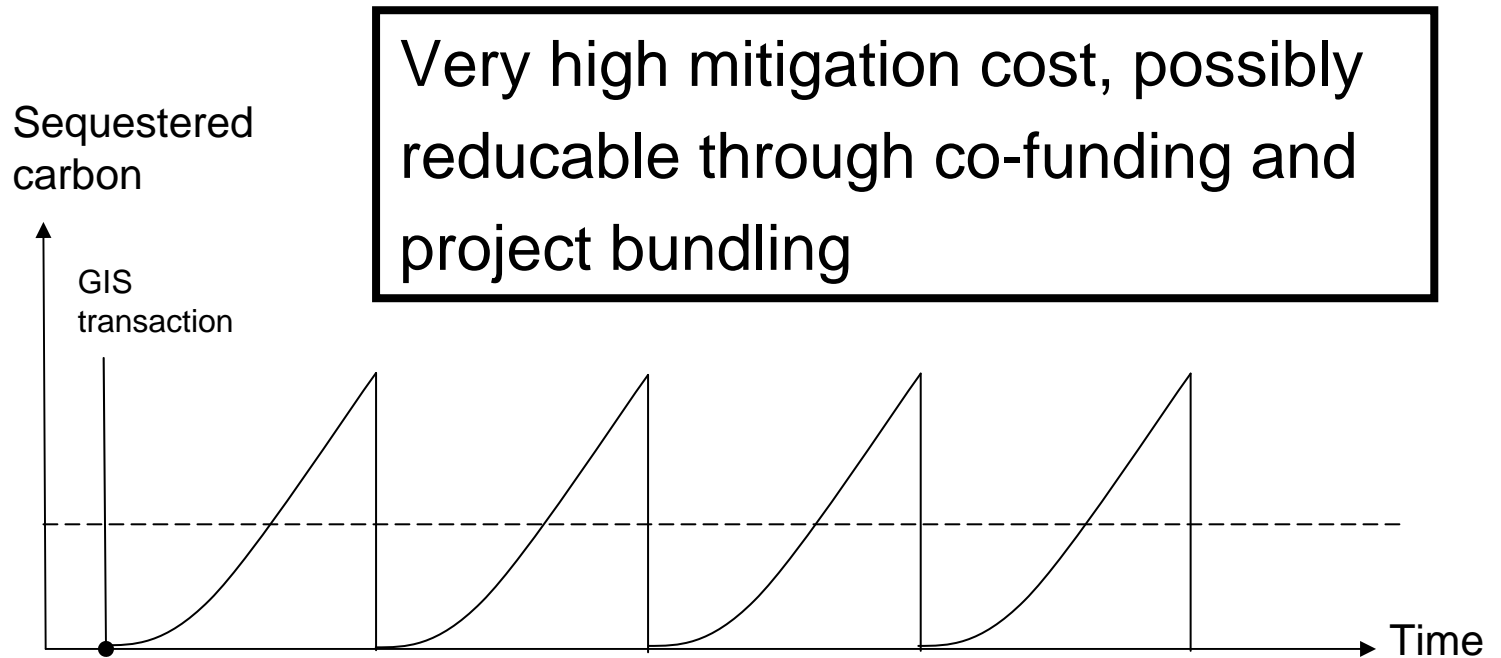
- Plantations of willow or poplar e.g. as belts around agricultural land (benefit from existing agricultural irrigation and fertilization)
- Plantation costs ~ € 4000/ha (willow);
€ 3000/ha (poplar)



4. Fast growing crops: Project potential (II)

- Approx. 40 to/ha theoretical permanent stock, between € 80 and 105 / sequestered ton CO₂

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5. Conclusions

GIS...

1. Can help to address (new) Land-Use project types
2. May better integrate co-benefits
3. Will very much depend on the national schemes, on market development and on negotiations between buyer and seller countries



THANK YOU!

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